



# University of LOWELL

## Continuing Education

Spring  
Schedule

1982

### CONTENTS

Undergraduate Courses . . . . .	3
Workshops / Seminars . . . . .	4
Community Service Program	6
Graduate Studies . . . . .	8

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# Undergraduate Evening School

Continuing Education: Call 452-5000 ext. 2221 or 2228

## CREDIT PROGRAMS

**MANAGEMENT**  
**ACCOUNTING**  
**BANKING**  
**INFORMATION SYSTEMS**  
**APPLIED CHEMISTRY**  
**ENGINEERING TECHNOLOGY**  
**CIVIL**  
**ELECTRONIC**  
**MECHANICAL**  
**INDUSTRIAL TECHNOLOGY**  
**MANUFACTURING OPTION**  
**WATER & WASTE OPTION**  
**PLASTIC OPTION**  
**APPLIED MATHEMATICS**  
**APPLIED MATHEMATICS -**  
**COMPUTER SCIENCE**  
**ADMINISTRATION OF**  
**LAW & JUSTICE**  
**LIBERAL ARTS**  
**NURSING (Open to R.N. only)**

## Spring Session Calendar 1982

Month	Mon.	Tues.	Wed.	Thurs.	Friday
JANUARY	4	5	6	7	
	11	12	13	14	
	18	19	20	21	
	25	26	27	28	
FEBRUARY	1	2	3	4	
	8	9	10	11	12 Mon. Class
	<del>15</del>	16	17	18	
	22	23	24	25	
MARCH	1	2	3	4	
	8	9	10	11	
	15	16	17	18	
	22	23	24	25	
	29	30	31	1	2 Make-Up
APRIL	5	6	7	8	
	12	13	14	15	16 Make-Up
	<del>19</del>	20	21	22	23 Class
	26	27	28	29	
MAY	3	EXAMINATIONS		5	6
	Exams			Registration	

## CREDIT PROGRAMS

The Undergraduate Evening School offers a wide panorama of college-level courses leading to associate and baccalaureate degrees. Students can work toward their degrees in these part-time, evening courses at a pace tailored to their individual free time.

Entrance requirements for undergraduate degree programs are graduation from a recognized high school or a Massachusetts High School Equivalency Certificate or equivalent.

## GENERAL POLICIES

**Policy Changes:** The University of Lowell reserves the right to change requirements, subjects, courses, regulations, and other policies stated in the current catalogue without formal notice.

**Matriculation:** In order to be matriculated it is necessary for the student to demonstrate ability to participate in college level classes, in addition to satisfying the entrance requirements. Matriculation in a degree program is effected upon the satisfactory completion of a minimum of 18 credits in required subjects. One credit is one class hour per week per semester.

## REGISTRATION INFORMATION

**Scheduled Registration:** Students may register by filling out the necessary forms and paying the required fees before attending classes. Registration is held on the dates indicated in the calendar. On those days the Business Office is open from 6:00 p.m. to 8:30 p.m. A student is not registered until all tuition and fees have been paid and the individual class cards have been validated by the Business Office. These cards are required for admittance to class; in addition, the Business Office will issue a numbered receipt. Students must obtain an identification card during this registration period.

**Late Registration:** Late registration is permitted for a limited period by payment of the late registration fee. No new registration or class changes are accepted after the end of the second week of classes.

**Class Schedule:** Classes in the Undergraduate Degree Program are scheduled on Monday, Tuesday, Wednesday, Thursday and Friday evenings as listed in the schedule from 7:00 p.m. to 10:00 p.m. Other hours are sometimes scheduled in individual subjects, in which cases the hours are listed with the subject descriptions. Saturday classes may also be scheduled.

**Size of Class:** Those classes which do not register a minimum of 15 students may be cancelled.

## TUITION & FEE INFORMATION

**Registration Fee:** A payment of \$5.00 per semester is required of all students for registration and compulsory insurance, in addition to tuition and other charges. This payment is not refundable.

The above compulsory fee, approved by the Board of Trustees of the University of Lowell includes an accidental medical insurance plan to cover registered students in the Evening School while on the premises of the University for scheduled instruction and while engaged in any supervised activity sponsored by the Evening School. Payment will be made for medical expenses from such accidents up to a maximum of \$1,000. Claim forms must be obtained from the Evening School Office and taken to the doctor or hospital at the time of treatment. Benefits are paid directly to the medical facility.

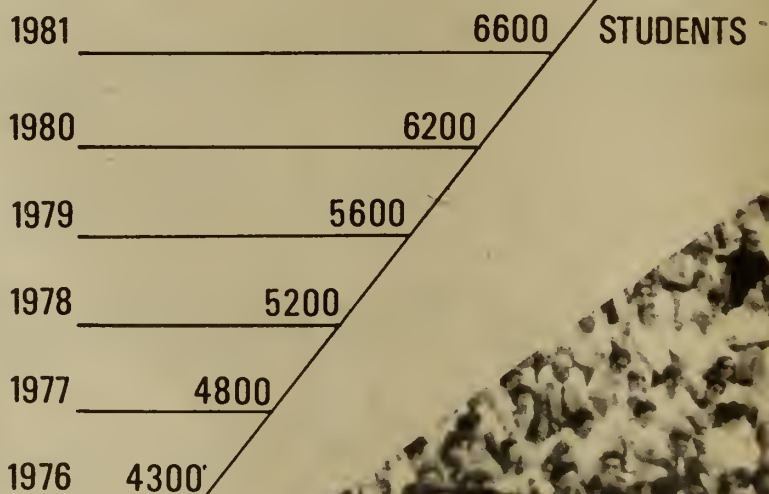
**Tuition:** Tuition charges for Undergraduate Degree subjects are \$30.00 per contact hour.

**Laboratory Fee:** A \$20.00 laboratory fee is charged any student who registers for a laboratory class.

**Refund Policy:** During the first week of classes students may receive a 50% refund of tuition. NO refunds after the first week of classes. Registration and late registration fees are not refundable. STUDENTS MUST FILE AN APPLICATION FOR REFUND WITH THE EVENING SCHOOL OFFICE.

**Waivers:** Tuition waivers do not apply to Evening Division Continuing Education subjects. Veterans may receive normal monthly benefits from the Veterans Administration, but there will be no waiver of tuition for subjects taken in a self-supporting program.

**Withdrawal:** Students withdrawing from any class must officially notify the Evening School Office immediately on forms provided by the office.



We're on our way UP....Are You?

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# Second Semester Offerings

JANUARY 1982

## UNDERGRADUATE REGISTRATION

January 11, 12, 13, 14

6:30 - 8:00 P.M.

Ball Hall, Room 214, North Campus

Classes begin January 18, 1982

## PREREGISTRATION

for First Summer Evening Session

April 5th through April 23rd, 1982

COURSE NO.	COURSE TITLE	NIGHTS OFFERED	PREREQUISITE	COURSE NO.	COURSE TITLE	NIGHTS OFFERED	PREREQUISITE
<b>ACCOUNTING, ECONOMICS AND MANAGEMENT</b>				<b>MATHEMATICS</b>			
60.201	Accounting Principles I	Mon.,Wed.,Thurs.	-----	90.010	Introductory Mathematics	Tues.,Thurs.	-----
60.202	Accounting Principles II	Mon. thru Thurs.	60.201	90.111	Fundamentals of Algebra	Tues.,Thurs.	-----
67.302	Intermediate Accounting II	Tues.	60.301	90.112	College Algebra for	Tues.,Thurs.	90.111 or Placement Exam
60.311	Managerial Accounting	Wed.	60.202	90.113	Management Science I	Tues.,Thurs.	90.111 or Placement Exam
60.362	Business Law I	Mon., Wed.	-----	92.115	College Trigonometry	Wed.,Thurs.	90.113
60.363	Business Law II	Mon.	-----	90.119	College Algebra for	Thurs.	90.112
67.402	Advanced Financial Accounting II	Tues.	67.401	90.131	Management Science II	Mon.,Tues.	92.115
67.412	Cost Accounting II	Wed.	67.411	90.132	Calculus I	Mon.,Tues.	90.131
67.431	Federal Income Taxes	Thurs.	60.202	90.231	Calculus II	Mon.,Tues.	90.132
64.201	Economics I	Mon.,Wed.	90.111	90.232	Calculus III	Mon.,Tues.	90.231
64.202	Economics II	Mon. thru Thurs.	90.111	90.241	Calculus IV	Mon.,Tues.	90.112 or 90.113
64.307	Government & Business	Tues.	64.201 or 64.202	90.242	Statistics for Business I	Tues.	90.241
68.312	Managerial Economics	Thurs.	64.201 or 64.202, 90.242	92.234	Statistics for Business II	Wed.	90.231
69.201	Principles of Management	Mon., Tues., Wed.	-----	92.302	Differential Equations	Thurs.	92.234
66.321	Marketing Principles	Tues.	64.201	92.321	Introduction to Applied Mathematics II	Mon.	90.112 or 90.113 or equivalent
66.331	Business Finance	Thurs.	60.202, 64.201, 64.202	92.360	Discrete Structures I	Wed.,Thurs.	92.321, 92.265
66.371	Operations Management I	Thurs.	90.242	92.383	Introduction to Statistics	Tues.	90.112, 90.113 or equivalent
69.411	Current Mgmt. Problems	Thurs.	69.410	92.412	Complex Variables II	Tues.	92.411
69.414	Business Systems & Procedures	Thurs.	69.201	92.454	Numerical Analysis II	Mon.	92.362
69.415	Affirmative Action	Tues.	-----	92.209	Basic Programming I	Mon. thru Thurs.	-----
69.417	Real Estate	Mon.	60.362	92.219	Basic Programming II	Mon. thru Thurs.	previous programming experience
66.421	Purchasing & Materials Management	Tues.	66.321 or permission of coordinator	92.263	Fortran Programming	Tues.,Wed.,Thurs.	90.112 or 90.113
66.426	Sales Management	Wed.	66.321	92.265	Introduction to Pascal	Mon.,Wed.	-----
66.434	Investment Management	Wed.	66.331	92.360	Data Structures	Wed.,Thurs.	92.265, 92.321
66.451	Personnel Management	Thurs.	69.201	92.365	Cobol Programming I	Mon.,Wed.	92.209
66.452	Industrial Relations	Mon.	66.451	92.366	Advanced Fortran Programming	Wed.	92.263
69.464	Management Information Systems II	Thurs.	69.463	92.367	Assembler Language Prog. I	Tues.,Thurs.	92.263
66.481	Risk Management & Insurance	Mon.	-----	92.368	Cobol Programming II	Wed.,Thurs.	92.365
69.498	Business Policy	Wed.	senior status	92.453	Pascal Programming	Mon.,Wed.	previous programming experience
90.241	Statistics for Business I	Mon.,Tues.	90.119	92.462	Systems Programming	Thurs.	92.367
90.242	Statistics for Business II	Tues.	90.241	92.464	Systems Design & Development II	Tues.	92.463
<b>BANKING</b>				92.468	Minicomputer Principles & Applications	Tues.	90.132, 92.367
69.101	Principles of Banking	Mon.	-----	92.469	Compiler Construction Techniques	Mon.	92.367, 92.360
69.102	Bank Management	Mon.	-----	92.470	Data Communications	Wed.	92.265 or 92.453; 92.360
69.104	Analyzing Financial Statements	Wed.	60.201	92.474	Data Base Management	Thurs.	92.263 or 92.368; 92.360
69.105	Installment Credit	Tues.	-----	*Credit given for only one of 92.265, Introduction to Pascal, or 92.453, Pascal Programming.			
69.106	Real Estate Finance	Tues.	-----	<b>CIVIL ENGINEERING TECHNOLOGY</b>			
69.107	Bank Investments	Mon.	69.101	15.124	Surveying II	Mon.	15.123
69.109	Marketing for Bankers	Wed.	-----	15.239	Strength of Materials	Wed.	23.221 or 15.237
69.110	Savings & Time Deposit Banking	Tues.	-----	15.242	Steel Design I	Tues.	15.239, 15.251
69.111	Negotiable Instruments	Wed.	-----	15.243	Construction Materials	Mon.	99.142, 15.239 corequisite
69.112	Corporate Banking	Tues.	-----	15.246	Introduction to Hydraulics	Mon.	15.239; 15.238 or 23.222
69.113	Credit Department Management	Wed.	-----	15.254	Soil Mechanics I	Thurs.	15.243, 15.239
69.114	Branch Management	Tues.	-----	15.394	Soil Mechanics Lab.	Thurs.	15.254
<b>CHEMISTRY</b>				15.486	Transportation Elements	Thurs.	15.257
84.112	General Chemistry II	Mon.	84.111; 84.114 corequisite	<b>ELECTRONIC ENGINEERING TECHNOLOGY</b>			
84.114	General Chemistry Lab. II	Wed.	84.113; 84.112 corequisite	17.128	Basic Electronics	Thurs.	17.127
84.121	Chemistry I	Thurs.	-----	17.223	Electric Circuits I	Wed.	90.131, 99.142
84.122	Chemistry II	Thurs.	84.121	Both may be taken concurrently			
86.122	Analytical Chemistry	Tues.	86.121	17.224	Electric Circuits II	Wed.,Thurs.	17.223, (90.132 may be taken concurrently)
84.224	Principles of Organic Chemistry II	Mon.	84.223; 84.226 corequisite	17.225	Electric Circuits III	Wed.	17.224
84.226	Principles of Organic Chemistry Lab. II	Wed.	84.225; 84.224 corequisite	17.240	Electromechanics	Mon.	17.224
84.345	Physical Chemistry II	Thurs.	84.344; 84.347 corequisite	17.350	Control Systems I	Wed.	17.225, 90.132, 99.142
84.347	Physical Chemistry Lab II	Tues.	84.346; 84.345 corequisite	17.360	Electronics Lab III	Tues.	17.359, 17.363
86.352	Chemical Applications	Mon.	84.345	17.361	Project Lab. A.	Mon. thru Thurs.	17.360, 17.364
84.314	Analytical Chemistry II	Thurs.	86.122; 99.143; 84.316 corequisite	17.362	Electronics I	Thurs.	17.224, 90.132, 99.142
84.316	Analytical Chemistry II Lab.	Wed.	86.122; 84.314 corequisite	17.364	Electronics III	Thurs.	17.363
<b>SCIENCE</b>				17.366	Applied Digital Devices	Tues.	17.364, 17.372
81.111	Principles of Biology II	Tues.	-----	17.372	Logic Design II	Mon.,Tues.	17.371
83.101	Life Science I	Thurs.	-----	17.376	Electromagnetic Theory I	Thurs.	92.234
83.101	Emergency Medical Care	Mon.	-----	17.382	Engineering Problem Solutions II	Mon.	17.372, 17.381
A First Responders Course				17.391	Project Lab. B	Mon. thru Thurs.	17.361, 17.366
83.346	Emergency Medical Care II	Thurs.	83.345	17.392	Project Lab. C.	Mon. thru Thurs.	17.391
89.102	General Geology II	Tues.	89.101	17.418	Minicomputer Programming II	Mon.	17.417
93.342	Fundamentals of Science II	Thurs.	-----	17.481	Microprocessors II	Thurs.	17.480
* 99.141	Physics I	Tues.,Wed.,Thurs.	92.115 concurrently	17.486	Communication Theory II	Mon.	17.485, 92.234
* 99.142	Physics II	Wed.,Thurs.	99.141; 90.131 corequisite	17.491	Intro. Microprocessor Lab.	Mon. thru Wed.	17.371
* 99.143	Physics III	Tues.	99.142; 90.132 corequisite	17.493	Project Lab. D	Mon. thru Wed.	17.392
				17.499	Electronic Research Topics	TBA	permission of coordinator
				23.455	Thermodynamics & Heat Transfer	Mon.	90.132, 99.142

\*Class and Laboratory. Some Friday night classes required.



CONTINUED

COURSE NO.	COURSE TITLE	NIGHTS OFFERED	PREREQUISITE	COURSE NO.	COURSE TITLE	NIGHTS OFFERED	PREREQUISITE
<b>INDUSTRIAL TECHNOLOGY</b>				<b>CLINICAL LABORATORY SCIENCES</b> (Class hours 6:00-9:00 p.m.)			
20.152	Water Biology	Wed.	-----	35.164	Laboratory Safety	Mon.	
20.203	Industrial Power Transmission			35.202	Human Anatomy & Physiology II	Wed.	35.201; 35.204 corequisite
20.211	Industrial Technology Lab. I	Tues. Mon.	20.201, 20.203 corequisite	35.204	Human Anatomy & Physiology Laboratory II	Thurs.	35.203; 35.202 corequisite
20.226	Water Chemistry II	Wed.	20.225	35.252	Physiological Sciences I	Mon.	35.251; 35.254 corequisite
20.252	Wastewater Treatment Plant Operations II	Tues.,Thurs.	20.251	35.254	Physiological Sciences II Lab.	Wed.	35.253; 35.252 corequisite
20.254	Wastewater Treatment Lab II	Mon.,Thurs.	20.251,20.253				
20.255	Water Distribution Systems	Mon.	-----				
20.258	Water/Wastewater Plant Management II	Mon.	20.257				
20.352	Water Supply & Treatment Operations II - Advanced	Thurs.	20.351	36.350	Human Biochemistry	Wed.	36.341, 36.343
20.355	Waterworks Operations Lab. II			36.361	Medical Instrumentation	Tues.	36.363 corequisite
				36.363	Medical Instrumentation Lab	Thurs.	36.361 corequisite
20.402	Manufacturing Operations	Thurs.	20.353				
20.414	Industrial Economic Management	Mon.	23.231,17.127				
20.416	Statistical Quality Control	Thurs.	-----				
20.423	Product Liability	Wed.	92.383				
		Wed.	-----				
<b>MECHANICAL ENGINEERING TECHNOLOGY</b>				<b>AREA I: BEHAVIORAL AND SOCIAL SCIENCES</b>			
23.111	Engineering Drawing I	Wed.	-----	43.112	U.S. History since 1877	Mon.	-----
23.112	Engineering Drawing II	Tues.	23.111	43.277	Ethnic Groups in American Life	Tues.	-----
23.201	Machine Tool Lab	Mon.,Wed.	-----	43.316	History of Lowell	Thurs.	-----
23.222	Dynamics	Mon.	90.132, 23.221	43.317	The American Frontier	Wed.	-----
23.223	Mechanics of Materials I	Wed.	90.132, 23.221	46.101	Introduction to American Politics	Mon.	-----
23.243	Elements of Thermodynamics II	Tues.	23.241	46.206	Constitutional Law & Civil Rights	Tues.	-----
23.202	Thermo/Fluids Lab.	Thurs.	23.242	47.101	General Psychology	Mon.,Tues.,Thurs.	-----
23.354	Problems in Mechanical Eng. Tech.	Thurs.	23.222, 23.223	47.163	The Human Life Span	Tues.	-----
22.302	Mechanics/Materials Lab	Tues.	23.223, 22.295, 23.222	47.232	Psychology of Personality	Wed.	-----
22.473	Mechanics of Materials II	Wed.	90.232, 23.223	47.328	Dynamics of Interpersonal Relations	Mon.	-----
23.353	Autocontrol & Instrumentation	Wed.	90.132	47.356	Psychological Tests & Measurements	Thurs.	-----
22.483	Aerodynamics	Tues.	23.242	48.101	Introduction to Sociology	Mon.,Tues.	-----
23.455	Thermodynamics & Heat Transfer	Mon.	90.132, 99.142	48.231	Sociology of the Family	Tues.	48.101
23.405	Senior project	Mon.	23.404	48.294	Futuristics IB	Tues.	-----
				48.299	Futuristics IIIB	Thurs.	-----
				48.341	Social Stratification	Wed.	48.101
<b>CRIMINAL JUSTICE</b>				<b>AREA II: FINE ARTS AND THE HUMANITIES</b>			
44.221	Criminology I	Thurs.	-----	42.101	College Writing	Mon. thru Thurs.	-----
44.234	Criminal Law	Wed.	-----	42.102	College Writing & Literature	Mon. thru Thurs.	42.101
44.261	Juvenile Delinquency	Mon.	-----	42.111	Business Writing	Mon.,Wed.	42.101
44.371	Criminal Justice Management & Planning	Tues.	-----	42.112	Technical & Scientific Writing	Tues.,Thurs.	42.101
44.390	Research Methods in Criminal Justice	Wed.	-----	42.212	The Short Story	Tues.	-----
46.206	Constitutional Law & Civil Rights	Tues.	-----	42.246	The Rogue in Fiction	Thurs.	-----
				42.295	History of American Literature II	Wed.	-----
27.202	Plastics Materials Science II	Mon.	27.201	45.201	Introduction to Philosophy	Wed.	-----
27.402	Plastics Processing Tech II	Wed.	27.401	45.202	Introduction to Logic	Mon.	-----
27.406	Polymer Structures	Wed.	permission of instructor	45.203	Introduction to Ethics	Thurs.	-----
	Properties & Applications	(6-9 PM)		50.102	Beginning French II	Mon.	50.101
27.452	Selected Topics - Rubber II	Tues.	27.451	54.101	Beginning Spanish I	Wed.	-----
				54.102	Beginning Spanish II	Wed.	54.101
				54.212	Intermediate Spanish II	Wed.	54.211
				57.271	Painting I Studio	Tues.	-----
				58.203	Survey of Art I	Wed.	-----
<b>NURSING</b>							
33.201	Introduction to Nursing	Mon.(5-7 pm)	33.202 corequisite				
33.202	Pathophysiology	Wed. (6:30-9:30 pm)	33.201 corequisite				
33.401B	Nursing Care of Clients in Crisis	Mon. & Wed. (6-9 pm)	permission of coordinator				

University of Lowell  
Continuing Education

One University Avenue  
Lowell, Massachusetts 01454



## lastics Seminars

	1981	1982			
	LOS ANGELES	BOSTON	CHICAGO	NEW ORLEANS	BOSTON AREA
A. PLASTICS FUNDAMENTALS, SELECTION, WHAT'S AHEAD	Dec. 13	Jan. 18/20	Feb. 22/24	Mar. 8/10	Mar. 29/31
B. MARKETS FOR PLASTICS	Dec. 9/10		Mar. 1-2	Mar. 8/9	Apr. 26/27
C. DESIGNING WITH PLASTICS	Dec. 11/12	Jan. 21/22	Feb. 25/26		
D. TESTING OF PLASTICS	Dec. 14-15	Jan. 21/22			Mar. 15-16*
E. HANDS ON TESTING					Mar. 15-17*
F. INJECTION MOLDING	Dec. 7/8	Jan. 25-26	Mar. 3-4	Mar. 11-12	Mar. 15-16*
G. HANDS ON INJECTION					Mar. 15-17*
H. INJECTION MOLO DESIGN	Dec. 9/10	Jan. 27/28	Mar. 5-6		Mar. 22/23
I. EXTRUSION	Dec. 14-15	Jan. 29/30		Mar. 11-12	Mar. 18-19*
J. HANDS ON EXTRUSION					Mar. 17/19*
K. BLDW MOLDING	Dec. 4	Jan. 23	Feb. 27	Mar. 13	Apr. 28
L. REINFORCED PLASTICS	Dec. 4-5				Apr. 29/30
M. REACTION INJECTION (RIM)					Apr. 1-2
N. POLYURETHANES Chemistry/ Formulations/Processes					Mar. 25/26

\*at University of Liverpool

**MEDICAL POLYMERS: 4th INTERNATIONAL SEMINAR Apr. 19-21 Boston**  
Implants, pharmaceuticals, dental, medical assist devices, others. If you desire complete program, check box on last page/mailing label.

**GOOD CLINICAL PRACTICES** Apr. 22-23 Boston  
obligations of clinical investigators, monitors, FDA, etc. If you desire complete program, check box on last page/mail

- ☐ Please enroll me in the following Workshop(s)-Seminar(s): Programs in Health Professions
- ☐ Please forward additional information on the following programs:

No.	Title	Fees
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2. How often do you feel nervous or stressed?		
3. How often do you feel tired or exhausted?		
4. How often do you feel sad or lonely?		
5. How often do you feel angry or irritated?		
6. How often do you feel anxious or worried?		
7. How often do you feel happy or content?		
8. How often do you feel confident or self-assured?		
9. How often do you feel motivated or energetic?		
10. How often do you feel calm or relaxed?		

University of Lowell

Continuing Education

One University Avenue  
Lowell, MA 01854

Make check payable to: University of Lowell.



## Workshops & Seminars Management/Technology

### THE ENGINEER AS MANAGER March 11-12

Developed for selected engineers who make key management decisions . . . and refuse to accept mediocrity at any level. Covered will be:

- How to win the support of superiors.
- How to develop an engineering staff of self-starters
- How to communicate ideas orally and in writing
- How to handle staff training
- How to plan for success in operations
- How to accomplish more in less time
- plus management strategies relating to other essential areas

### INTRODUCTION TO COMPUTERS AND BASIC PROGRAMMING FOR NON-DATA PROCESSING MANAGERS March 15-18

A "hands-on" computer program using the University facilities. The objectives in presenting such a seminar are to familiarize the participants with computer technology, capabilities, operations, flow charting techniques as well as the introduction of the computational language BASIC.

### EFFECTIVE WRITTEN COMMUNICATION March 17-18

Clear, coherent, convincing report and memorandum writing can make the difference between acceptance of ideas or their rejection. The ability to communicate effectively is one of the most important assets any ambitious corporation or organization employee can cultivate. To meet these needs, an active specialist in organizational communication formerly from the prestigious Arthur D. Little Corporation is offering this program.

### INCREASING MANAGER EFFECTIVENESS March 18 - Lowell, MA March 19 - Hartford, CT

This program is for men and women managers who pursue proven techniques in mastering the people aspect of their job. It is designed to help handle any "people problems" encountered as managers. Discussed will be a wide variety of concepts, techniques and approaches to enhance effectiveness with people; such as:

- Understanding basic patterns of human behavior
- The Manager's Role;
- The Leadership Role
- Changing behavior
- Conducting the Performance Review;
- Applied Understanding.

### ENERGY MANAGEMENT FOR BUILDINGS March 24-25

Covers following topics: Surveying Spaces Involved; Identifying Potential Energy Savings; Implementing an Energy Plan; Update of the Energy Situation; Pitfalls of Energy Management Programs; Determining Program Investment Requirements; Developing a Workable Program; Determining Payback Periods; and Using all Resources.

### PRINTED CIRCUIT QUALITY ASSURANCE SEMINAR April 6-7

This two-day program will help to upgrade you in the latest methods and techniques. Methods that identify specific areas of concern for today's extreme "quality" and production requirements will be discussed. With constant miniaturization of electronic products, the industry is faced with many quality problems. Discussed at this comprehensive program are solutions to some of these problems. Areas of discussion:

- Proper Requirements for Accuracy in Photo Tools
- Cross Sectioning Requirements P.C. Boards
- Cleanliness to Reduce Contaminants
- The Need for Electronics Testing to Meet Today's
- Fineline Requirements
- Solderability and Reliability of Interconnections
- Proper Q.C. Standards
- Survey Data and the Facility

### MANUFACTURING COST ESTIMATING April 26-27

As a result of out-moded approaches to the estimating function, companies often find their estimates are "wide of their mark." To be discussed are: Approaching the estimating job - How accounting and overhead applications influence estimates - Estimating in the "make or buy" decision - Using the learning curve in estimating - Estimating for realistic pricing - Using the computer in estimating - Estimating capital investment cost.

### PURCHASING ESSENTIALS FOR THE NEW BUYER AND "OTHERS" April 28-29

This seminar is designed to help newly appointed Purchasing Personnel obtain skills necessary to cope with the problems that they will be facing in today's environment. It is designed to be practical with attendees participating in case study discussions. To be discussed are: Specialized Purchasing Procedures; Cost saving ideas; Negotiation; Selection of supply sources; Determining Price; Legal aspects of Purchasing.

### FINANCE AND ACCOUNTING FOR OPERATION MANAGERS May 18

This practical one day program gives you the financial grounding you need to understand the dollars and cents implications of your own decisions - and to grasp the load financial forces motivating your company and others. New high point covered:

Budgeting; Planning; Profitability; Productivity; Cash Flow; Break Even; Cost Reduction; and Profit Improvement.

### MANAGEMENT SKILLS FOR MANAGERS May 19-20

This program is for middle and upper-level managers.

To be discussed are X, Y and the highly successful Japanese Industry's Z management techniques. It is for those who recognize that is not enough to continue using yesterdays and successful methods; that the only route for productivity improvement is recognition, motivation and communication. Participants will have a unique opportunity to encounter management and organizational dilemmas, to work through solutions and to get feedback on their quality. Measurement of individual and team performance in 3 major areas will be covered.

- Managerial Self-Assessment
- Interpersonal and team effectiveness
- Communication

### COST EFFECTIVE TRAINING SKILLS June 2 - Lowell, MA June 9 - Hartford, CT

One day comprehensive program will involve you in new concepts, strategies, and creative techniques and methods.

Involvement is a key to profit in training. You will actively participate in a wide variety of imaginative exercises that will show you how to add new dimensions to your training program.

Assessment of Productivity:

- Setting Instructional objectives
- Selection and Cost effective use of visual aids
- Evaluation of training programs
- Participative Techniques

### TOOLS FOR THE DEVELOPING WOMAN MANAGER June 8-9

Effective management techniques; develop the ability to look at problems; recognize and understand different leadership styles - determine which style is most productive; strengthen interpersonal skills; increase job productivity are all subjects covered in this program.

### FUNDAMENTALS OF FIRST-LINE MANAGEMENT June 29

THE PROGRAM

This workshop covers the broad spectrum of first-line management. The participant will learn how:

- to motivate employees to want to do the best job possible
- to plan, organize and control a work force to "maximum" productivity
- to improve communication skills
- to understand and deal with managing conflict constructively

In a variety of challenging workshop sessions, discussions and demonstrations, the participant will learn a new awareness of the business of People Management.

Those who attend this program will not automatically become better supervisors. This depends on individual ability. They will however, gain a better understanding of management principles and applications for best results.

## Programs in Health Professions Programs For Nurses

### HEALTH ASSESSMENT OF THE ADULT - RN'S

This course introduces the registered nurse to a systems-oriented approach to the skills of history-taking and physical assessment of the adult. Each three hour session combines theoretical input with supervised laboratory practice. Focusing on history-taking and assessment of the head, eyes, ears, nose, throat and the respiratory system, also it encompasses assessment of the cardiovascular, abdominal, genitalia, musculoskeletal, skin and neurological systems. The concept of health assessment as an integral part of the nursing process is emphasized.

ENROLLMENT FEE: \$120.00

DATES: January 25 March 1, 8, 15, 22, 29  
February 1, 8, 22 April 5, 12, 26

TIME: 7:00-10:00 p.m.

### "PROFESSIONAL BURN OUT - HOW TO DEAL WITH STRESS ON THE JOB" - FOR RN'S & LPN'S

This program will define what Burn Out is, as well as how and why it occurs. Participants will determine their own personal level of burn Out, and identify major on the job stressors. Techniques for Burn Out management will be discussed and practiced.

ENROLLMENT FEE: \$20.00

DATE: March 25  
TIME: 7:00-10 p.m.

### DEPRESSION AND ANXIETY - FOR RN'S & LPN'S

This workshop will help participants gain and understanding of the psychological dynamics of anxiety and depression. Stressed will be methods of intervention for helping individuals. Audio-visual material and experimental activities will highlight content.

ENROLLMENT FEE: \$50.00, which includes meeting materials, coffee break and lunch

DATES: March 12, 26

TIME: 9:00 a.m. to 3:00 p.m.

### HOLISTIC HEALTH CARE - AN APPROACH FOR HEALTH CARE WORKERS - FOR RN'S & LPN'S

This course provides participants with an opportunity to develop an understanding of the concept of holistic health. Among the systems to be considered are biofeedback, healing, transactional analysis, stress management point pressure, massage and acupuncture.

ENROLLMENT FEE: \$50.00

DATES: March 3, 10, 24, 31

April 7  
TIME: 7:00 to 10:00 p.m.

### CONTRACEPTIVE COUNSELING: The Strategies, The Choices, The Decision - FOR RN'S & LPN'S

This course will focus on Nursing Assessment, planning and intervention with clients in need of contraceptive counseling. Emphasis will be given to nursing approaches which stimulate the involvement of the client in the decision making process. Specific birth control methods and current research findings will be discussed.

ENROLLMENT FEE: \$50.00

DATE: April 7

TIME: 9:00 a.m. to 3:30 p.m.

### HOLISTIC NUTRITION - FOR RN'S & LPN'S

Diet is clearly a major factor affecting health and well-being. In this course we will examine the role of nutrition in a holistic approach to health care and the interactions of diets environment and genetics as they relate to degenerative disease (heart disease, cancer, diabetes, allergy, blood glucose abnormalities, etc.) We will also review techniques for dietary assessment; and explore the use of holistic approaches in facilitating dietary change.

ENROLLMENT FEE: \$50.00

DATES: April 14, 21, 28

May 5, 12  
TIME: 7:00 to 10:00 p.m.



# Community Service Program

## NON-CREDIT COURSES

In the Community Service Program the resources of the University are open to adults of all ages and backgrounds in a varied spectrum of non-credit evening courses.

Registration for these courses will be Feb. 17 and 18, from 6:00 to 8:00 p.m. in Dugan Hall, South Campus. Classes begin the week of February 22nd.

Classes may be cancelled due to insufficient enrollment. For those classes that are cancelled, full tuition and fees will be refunded.

Participants who withdraw following 1st class meeting will receive 50% reimbursement of tuition and fees. NO REFUNDS are given for withdrawal after 1st class meeting.

In addition to tuition and fees as given, certain courses require the purchase of materials and equipment. Every effort is made to keep these additional expenses to a minimum.

## LANGUAGE & LITERATURE

### Creative Writing: Fiction and Poetry 01-02

A workshop in imaginative writing in which students' work will be analyzed and discussed by the instructor and their fellow students. The course also includes the study of various schools of poetry and fiction.

Tues., 7:00-9:00 p.m. 10 weeks  
Instructor: Brian McDonough  
Tuition & Fees: \$43.00

### Great Creative Writing: Non-fiction 01-03

A course designed to teach the styles and techniques of writing nonfiction articles. Styles to be studied include documentary, biographical travelogue, "how-to" articles and personality profiles. Also, there will be focus on the journalistic aspects of prose. Part of each period will be a workshop in which student articles will be read and discussed by the instructor and other students.

Thurs., 7:00-9:00 p.m. 10 weeks  
Instructor: Brian McDonough  
Tuition & Fees: \$43.00

### Public Speaking & Report Presentation 01-05

A practical workshop oriented to establishing confidence and poise for those who have problems in addressing groups or expressing opinions, ideas, or general oratorical techniques. These discussions will cover techniques of effective oral communication and emphasize mind-body confidence building; guided by Hull's "Squeak-Read" delivery techniques.

Mon., 6:30-8:30 p.m. 10 weeks  
Instructor: Constance DiBenedetto  
Tuition & Fees: \$43.00

### English as a

### English as a Second Language 01-07

A course designed to improve communication skills in English. Emphasis will be placed on speech, listening and discussion skills.

Wed., 6:30-8:30 p.m. 10 weeks  
Instructor: Shirley MacDougall  
Tuition & Fees: \$43.00

### Conversational Spanish I 01-08

Designed for the person who desires a familiarity with the Spanish language this course emphasizes learning the useful everyday conversation that is essential when travelling or working. The course is taught in conversation, however, instruction in the fundamentals of pronunciation and the basic rules of grammar is included.

Tues., 7:00-9:00 p.m. 10 weeks  
Instructor: Priscilla Sicard Donlon  
Tuition & Fees: \$43.00

### Conversational Spanish II 01-09

A continuation of Conversational Spanish I, with additional emphasis on conversational skills.

Thurs., 7:00-9:00 p.m. 10 weeks  
Tuition & Fees: \$43.00

### Conversational Polish I 01-10

A course designed for people who wish to develop conversational skill in Polish as the key to an understanding

of this important culture.

Tues., 7:00-9:00 p.m. 10 weeks  
Instructor: Walter Grondalski  
Tuition & Fees: \$43.00

### Conversational Polish II 01-11

A continuation of Conversational Polish I, with emphasis on developing reading and writing skills.

Thurs., 7:00-9:00 p.m. 10 weeks  
Instructor: Walter Grondalski  
Tuition & Fees: \$43.00

### Conversational French I 01-13

In business, while travelling, or in discussion of art, a knowledge of the French language is most desirable. This course helps the student develop skills in speaking and understanding everyday French.

Wed., 7:00-9:00 p.m. 10 weeks  
Instructor: Charles Adams  
Tuition & Fees: \$43.00

### Conversational French II 01-14

A continuation of Conversational French I, providing additional exposure to the manner of speaking French.

Mon., 7:00-9:00 p.m. 10 weeks  
Instructor: Charles Adams  
Tuition & Fees: \$43.00

### Thinking & Study Skills 01-15

Adult Students - Are you playing with the idea of returning to school, but, are afraid you won't be able to keep up with the work? This course is designed to help adults become more efficient and successful learners. The program will include such topics as: underlining, outlining, notetaking and preparing for exams.

Thurs., 6:30-9:30 p.m. 5 weeks  
Instructor: Laurene Ziegler  
Tuition & Fees: \$43.00

### Speed Reading 01-16

The focus of this course is on how to increase your reading efficiency and how to deal with important reading skills that are often neglected.

Emphasis is on increasing reading rate and comprehension. The course is designed to enable students:

- adjust their reading rate to the difficulty of the material and to their own purpose in reading.
- to understand clearly and accurately what they read.
- to remember more of what they read.
- to develop attitudes toward reading that are purposeful, selective, and critical.

Tues., 6:30-9:30 p.m. 5 weeks  
Instructor: Laurene Ziegler  
Tuition & Fees: \$43.00

## ART

### Drawing 02-01

A variety of drawing assignments from the still life to the figure using different drawing media. Emphasis is on the basic skills essential to developing a personal style of expression. Each medium and technique will be demonstrated.

Tues., 7:00-9:30 p.m. 10 weeks  
Instructor: David Lowrey  
Tuition & Fees: \$55.00

### Portrait Drawing/Painting 02-02

Instruction in drawing and painting the human face. Students may work in pastels or oils and advance at their own individual pace. Learn how to treat the most challenging of all art problems - the human face.

Mon., 7:00-9:30 p.m. 10 weeks  
Instructor: David Lowrey  
Tuition & Fees: \$55.00

### Cartooning 02-03

Having fun while developing skills in the most popular form of everyday art. Learn to cartoon in simple, but, effective techniques of drawing. Students will prepare comic strips, single panel cartoons, and advertising art.

Thurs., 7:00-9:30 p.m. 10 weeks  
Instructor: William Bradbury  
Tuition & Fees: \$55.00

### Beginning Oil Painting 02-05

A basic and conventional approach to painting. Students will learn how to stretch and prepare canvas, mix, apply and render pigment. Assignments will encourage individual expression and exploration of the oil medium.

Thurs., 6:30-9:00 p.m. 10 weeks  
Instructor: Helen Lavasseur  
Tuition & Fees: \$55.00

### Commercial Art 02-08

Concerned with developing art skills essential to the creation and production of commercially oriented art. Studio assignments will deal with black and white drawings, layouts and paste-ups, lettering and some color problems. Technical aspects of graphics and reproduction will be covered.

Thurs., 7:00-9:00 p.m. 10 weeks  
Instructor: George Mackey  
Tuition & Fees: \$55.00

### Publications Art 02-09

For the commercially oriented art student preparing himself for the field of technical communications. Instruction in layout, color overlays, paste-ups and lettering for publications.

Mon., 7:00-9:30 p.m. 10 weeks  
Instructor: William Bradbury  
Tuition & Fees: \$55.00

### Woodcarving 02-10

An introductory course for the beginning student, covering basic carving with knife and gouges; in the round and relief design, as it applies to the characteristics of wood; finishing and tool sharpening. (Approx. \$20 for basic tools.)

Mon., 7:00-9:30 p.m. 10 weeks  
Instructor: Rupert Stangroom  
Tuition & Fees: \$55.00

### Sign Carving 02-11

An introduction to the design and execution of gracious wooden signs. The course will cover the basics of design, layout and hand carving, using chisels and gouges. Art elements and lettering of signs, care and maintenance of tools will be discussed.

Wed., 7:00-9:30 p.m. 10 weeks  
Instructor: Rupert Stangroom  
Tuition & Fees: \$55.00

### Water Color Techniques 02-13

Available to beginners and intermediate painters, this class will explore various approaches to water color. Wet on wet, dry brush, glazes, washes, pen

and ink, and collage will be techniques employed during the series. Landscapes, still lifes, cities, people and abstract exercises will be the focus of subject matter.

To encourage an individual style, and yet, handle water color spontaneously, with control is the goal of the course.

Thurs., 7:00-9:30 p.m. 10 weeks  
Instructor: Gracia Dayton  
Tuition & Fees: \$55.00

### Photography I 02-16

This course is intended for the beginner with a serious interest in the use of creative black & white photography. Technical considerations will share equal time with exploring the cameras and equipping of a simple working darkroom will be discussed.

Tues., 7:00-9:30 p.m. 10 weeks  
Instructor: Kevin Harkins  
Tuition & Fees: \$55.00

### Photography II 02-17

A direct continuation of the introductory course focusing on improvement of technique as a preparation for expressive photography.

Thurs., 7:00-9:30 p.m. 10 weeks  
Instructor: Thomas Belkakis  
Tuition & Fees: \$55.00

### Calligraphy: Roman Capitals 02-18

An introduction to the fine art of lettering from manuscript to the ancient techniques of beautiful and pictorial writing. Using the broad pen, the class will start with the Roman Capitals and will continue with the Renaissance Italic. Basic layout and design will also be discussed. (Approx. \$15 for supplies.)

Tues., 7:00-9:00 p.m. 10 weeks  
Instructor: Margaret Moler  
Tuition & Fees: \$43.00

### Calligraphy: Uncial 02-19

The class will begin with the study of the Uncial and Celtic letter forms, using the broad pen. The course will continue with the study of Versal letters. There will be a brief history of calligraphy and design elements that accompanied each writing style and how they relate to modern letter forms. (Approx. \$15 for supplies.)

Mon., 7:00-9:00 p.m. 10 weeks  
Instructor: Margaret Moler  
Tuition & Fees: \$43.00

### Stained Glass I 02-21

An ancient art which is being rejuvenated as a significant art form. This course is an introduction to the design and construction of ornaments, jewelry boxes, mirrors, and lamps executed in both the "Tiffany" and leaded glass methods. A list of materials, to be purchased by the student, will be available at the first class meeting.

Wed., 7:00-9:30 p.m. 10 weeks  
Instructor: Marilyn Mathieson  
Tuition & Fees: \$55.00

### Stained Glass: Etching 02-23

The course is designed for those who know the basics of this American art form. Students will learn how to create a design, prepare a pattern, and finally, etch a design on stained glass and a variety of surfaces.

Mon., 7:00-9:30 p.m. 10 weeks  
Instructor: Marilyn Mathieson  
Tuition & Fees: \$55.00



## MUSIC

### Introduction to Music Listening 03-01

A study of the great masterpieces of the symphonic, solo and chamber repertoire. The objective of the course is the deeper understanding and appreciation of the elements of music and a wider acquaintance with some of the world's finest musical works. The University offers two free concerts a week, October through April 1, at the University Concert Hall.

Wed., 7:00-9:00 p.m. 10 weeks  
Instructor: David Martins  
Tuition & Fees: \$43.00

### Jazz: Its History and Appreciation 03-02

A non technical survey of the origins, evolution and continuing development of jazz music as a distinctly original American art form. The course will trace the history of the music from its conception in turn of the century New Orleans, through contemporary periods. Emphasis will be placed on vocal, instrumental and compositional giants as: Louis Armstrong, Duke Ellington, Count Basie, Sara Vaughn and Billy Holliday, to name a few.  
Thurs., 7:00-8:30 p.m. 10 weeks  
Instructor: Don Bacon  
Tuition & Fees: \$35.00

### Guitar I 03-10

This course helps the student develop the basic styles of guitar playing: melody, chord, and the interpretation of simple rhythms. No previous musical experience necessary.  
Mon., 7:00-9:00 p.m. 10 weeks  
Instructor: Alan Donati  
Tuition & Fees: \$43.00

### Guitar II 03-11

Continuation of Guitar I. Some familiarity with the instrument is necessary. Prerequisite: Guitar I or permission of instructor.  
Tues., 7:00-9:00 p.m. 10 weeks  
Instructor: Alan Donati  
Tuition & Fees: \$43.00

## SPECIAL INTEREST

### Ballooning 04-02

A comprehensive course which covers all aspects of this exciting sport. Topics range from a discussion of the early balloonists to the proper launching and landing of a balloon. Students will be given the opportunity to be airborne on a tether.  
Thurs., 7:00-9:00 p.m., April 8th  
5 weeks  
Instructor: Dana Hardy, Jr.  
Tuition & Fees: \$100.00

### Interior Decoration 04-15

Enhance the beauty of your home by applying the techniques of professional interior decorating. Students will learn proper balance and integration of colors, fabrics, furniture styles and arrangement.  
Thurs., 7:00-9:00 p.m. 10 weeks  
Instructor: Leslie Thomas  
Tuition & Fees: \$43.00

### Investing for the 1980's 04-16

A guide to investment alternatives and expected rates of return in an inflationary economy. Subject matter will include common stocks, bonds, municipal bonds, techniques of fundamental and technical analysis and the place for options; various tax sheltered investments in financial planning.  
Mon., 7:00-9:00 p.m. 7 weeks  
Instructor: Reginald Johnston, Jr.  
Tuition & Fees: \$43.00

### Wine Tasting Workshop 04-18

An introduction to the major wine varieties and types. Tasting and serving techniques will be explored along with the fundamentals and uses of wine. Approximately 18 wines, selected for their color, bouquet, and flavor, will be tasted. An additional charge of \$15 to cover the cost of the wines, is due at the first meeting. Students should be 20 years of age or older. Class is limited to 20 students.

Tues., 7:00-9:00 p.m. 6 weeks  
Instructor: Charles Saunders  
Tuition & Fees: \$26.00

## PERSONAL DEVELOPMENT

### Job Hunting Skills 05-02

This course is designed to assist those who are searching for a new career or considering a career change. The sessions will cover such topics as:

- identifying career goals
- defining and packaging personal skills in relation to the current job market
- learning job interview skills
- tracking your progress after the interview.

Mon., 7:00-9:00 p.m. 10 weeks  
Instructor: John Coraccio, Jr.  
Tuition & Fees: \$43.00

### Human Relations 05-03

A broad based course designed to help the individual understand the forces which affect his behavior in the community and at work. Introduction to basic concepts of behavioral science and their application to management. Organizational, cultural and individual behavior in relation to managerial environments and fields of business administration. Techniques and skills to achieve effectiveness in interpersonal relations. Development of new supervisory methods; conflict resolving techniques and alternative modes of communication.  
Mon., 7:00-9:00 p.m. 10 weeks  
Instructor: Joseph Begley  
Tuition & Fees: \$43.00

### Travel & Tourism 05-04

An introduction to the glamorous world of the travel agent. The course is designed to familiarize the student with the travel industry. Travel and its attendant problems will be discussed from both the agent's and consumer's viewpoints.

Students will learn sales techniques, how to plan simple and complicated itineraries, schedule hotels, fares, tour groups, special interest and needs programs.

This course is of special interest to those who are considering re-entering the job market or those seeking an exciting new job opportunity.  
Wed., 7:00-9:00 p.m., 10 weeks  
Instructor: Julia Low  
Tuition & Fees: \$43.00

### Self-Hypnosis & Attitude Modification 05-05

Lectures will consist of a brief history of hypnosis, and basic concepts of the psychology of hypnosis. Each session will include open discussion, questions and answers. Students will receive instruction and training in self-hypnosis for self-improvement, as well as mind-power development, attitude modification (positive thinking). Students should be 18 years of age or older.

Two sessions will be offered:  
1st session: Mon., Feb. 22nd, 7:00-9:00 pm., 5 weeks  
2nd session: April 5th, 7:00-9:00 p.m., 5 weeks  
Instructor: Alexander Hasbany, professional hypnotist  
Tuition & Fees: \$22.00

### Assertiveness Training & Communication Skills 05-07

The purpose of these meetings will be to develop communication and assertiveness skills. These traits should assist one to cope with the social, personal, familiarly or professional situations that one may encounter causing undue anxiety or stress.  
Wed., 7:00-9:00 p.m. 10 weeks  
Instructor: David Favreau  
Tuition & Fees: \$43.00

## PRACTICAL SKILLS

### Needle Arts: Crewel 06-01

A stimulating course of interest to those who have a desire to create beautifully embroidered crewel pieces. Students will learn how to achieve balance and harmony in their needlework by using a variety of stitches and careful color placement. Skills will be mastered while working on Elsa William's floral kit entitled, "The Lowell". (Approx. \$10 for materials).  
Tues., 7:00-9:00 p.m. 8 weeks  
Instructor: Mary Jane Mastrovich  
Tuition & Fees: \$35.00

### Needlepoint 06-02

An introduction to the beautiful and practical art of needlepoint. Introduction to the basics of needlepointing - canvas direction, placement of stitches. Explanation of canvas size and qualities. Preparation of canvas. Discussion of different types of thread.

Class will practice two basic stitches on "doodle cloth" before working on the class piece. Individualized instruction will permit each student to progress at own pace. Twenty-two stitches will be learned, depending on the piece worked. Both the "doodle cloth" and the class sampler will be completed and will be suitable for framing. (Approx. \$12 for materials).

Wed., 7:00-9:00 p.m. 8 weeks  
Instructor: Mary Jane Mastrovich  
Tuition & Fees: \$35.00

### Mixology - Or How to Make a Good Drink 06-03

This course is designed to give the basics of concocting the most popular drink recipes. It will cover the needs from a small house party to a professional situation. Class is conducted by a professional hostess and is limited to 20 students. Upon the recommendation of the instructor, certificates of completion will be awarded. Students should be 20 years of age or older.

Wed., 7:00-9:00 p.m. 12 weeks  
Instructor: Joanna Hamlin  
Tuition & Fees: \$57.00

### Building the Energy Efficient House 06-04

Of interest to Designers, Builders and Contractors. A series of discussions designed to present a practical insight to the building of a "super insulated house" which slashes energy costs, we encourage builders, contractors and laymen, who are contemplating building, renovating or expanding present structures to attend this series of discussions designed to provide a practical insight and understanding of this mode of construction.

Gene Leger states that one does not have to incorporate expensive solar equipment to achieve the optimum "Energy Efficiency". In fact, houses requiring this source of heating are improperly designed.

Gene has proven the idea that one can build for approximately the same building costs (as done conventionally) a house that can be heated for minimum expense while providing a very comfortable living experience.

Thurs., 6:30-9:30 p.m. 8 weeks  
Instructor: Gene Leger  
Tuition & Fees: \$50.00

### Private Pilot Course 06-05

Designed for those who wish to obtain a private pilot's certificate or a pilot who wishes a refresher course for the bi-annual flight review required by the F.A.A.  
Thurs., 7:00-9:30 p.m. 10 weeks  
Instructor: Donald Dodge  
Tuition & Fees: \$69.00

### Pilot's Basic Instrument Course 06-06

Designed for the pilot who would like to start working toward an instrument ticket, by passing the written exam or as a refresher course for a pilot who needs updating.  
Mon., 7:00-9:30 p.m. 10 weeks  
Instructor: Donald Dodge  
Tuition & Fees: \$69.00

### Basic Communication Skills with the Deaf 06-07

An introduction to different modes of communication with deaf individuals (body language, fingerspelling), Signed English, American Sign Language-non-verbal communication skills. For beginners and those wishing a basic review.

Tues., 6:30-9:00 pm. 10 weeks, March 2  
Instructor: Linda Cullen  
Tuition & Fees: \$56.00

### Basic Gardening 06-13

Course is designed to teach the basics of home vegetable gardening including garden planning, seeds and transplants, soils and fertilizers, insects and diseases, companion planting and harvesting.  
Tues., 7:30-9:30 p.m. 8 weeks  
Instructor: Paula Milner  
Tuition & Fees: \$35.00

### Adult Swimming & Recreation 06-14

For the beginner: to prepare the non-swimmer for safe, recreational activity in or about the water.

For the intermediate: to familiarize participants with the proper stroke mechanics in four categories:

- elementary backstroke
- sidestroke
- breaststroke
- front crawl stroke

Students must be 18 years of age or older. All participants will be expected to sign statement of physical condition. Both classes are co-ed. Please bring personal equipment, soap and towel.

Participants' ability to swim is tested at the first meeting at 6:00 p.m. Students are then placed into proper category.  
Beginner: Fri., 6:00-7:30 p.m., 10 weeks  
Intermediate: Fri., 7:30-9:00 p.m.

10 weeks  
Each session will have a segment for recreation.  
Instructor: Andrew Cornellier  
Tuition & Fees: \$35.00

### Orientation to Computers 06-16

An orientation program that should provide participants with a basic introduction to how computers work. Currently, developing an understanding of the jargon related to computer operations and becoming better equipped to interrelate with others in your organization. This series should provide participants with an oversight of computer operations and their applications to the business world.  
Wed., 7:00-9:00 p.m. 10 weeks  
Instructor: Dennis Ready  
Tuition & Fees: \$43.00

## DEVELOPMENT OF LEISURE TIME

### Basic Hang Gliding 07-01

An introduction to the art of soaring. Starting with the history, design of hang gliders, how to fly, necessary safety precautions and basic weather conditions. Introductory lessons will be given in conjunction with flight operations. Approved ground school test will be conducted for "certification". Ground School classes will be held on Tuesday evenings, 7:00-9:30 p.m. Flight operations will be held on the following Saturday.

NOTE: To be eligible for flight, students must present a doctor's certificate of physical fitness for this activity. Insurance is compulsory - \$6.00 for six months or \$12.00 for one year.  
Thurs., April 8th, 7:00-9:30 p.m.

5 weeks  
Instructor: William Blood  
Tuition & Fees: \$70.00

### Advanced Hang Gliding & Meteorology 07-02

This class is open to students who have active Class I or II certificates. Classes will cover advanced flight techniques, thermals and weather interpretations.

NOTE: To be eligible for flight, students must present doctor's certificate of physical fitness for this activity.  
Wed., April 7th, 7:00-9:30 p.m.

5 weeks  
Instructor: William Blood  
Tuition & Fees: \$70.00

### Beginning Belly Dancing 07-03

Taught by Cyan, professional belly dancer, this oriental art not only provides entertainment, but also is an easy and enjoyable way of toning the body. All you need are leotards, body suit and willingness.

NOTE: All participants must sign statement of physical condition the first night of class.

Tues., 7:00-8:00 p.m. 8 weeks  
Instructor: Cyan  
Tuition & Fees: \$22.00

### Advanced Belly Dancing 07-04

For those who have had previous belly dance lessons and wish to learn more, Cyan provides an advanced course where the student will learn to combine the basic dance steps and the rhythm of the finger cymbals into a graceful dance routine.

Tues., 8:15-9:15 p.m. 8 weeks  
Instructor: Cyan  
Tuition & Fees: \$22.00

### Hatha Yoga: Beginning 06-05

Learn the ABC's of Yoga: A=Awareness; B=Balance; C=Centering - The ABC's of Yoga can be yours to: Look Better \* Feel Better \* Be Better.

Beginning course focuses upon: 1. postural alignment; 2. correct breathing (Pranayam); 3. basic postures (Asanas) to stretch and tone entire body. Overall effect is the release of tension and stress, greater flexibility. Instructor ensures individual attention.

NOTE: Please wear loose, non-restrictive clothing.  
(continued on page 8)



NON-CREDIT COURSES - CONTINUED

tive clothing and bring non-skid mat or rug.  
Thurs., 6:00-7:30 p.m. 10 weeks  
Instructor: Helen Sia  
Tuition & Fees: \$40.00

Hatha Yoga: Continuing 07-06  
Continuing course focuses upon: 1. refinement of basic Asanas and Prana-yam; 2. introduction to more challeng-ing Asanas and Meditation; 3. healing energy and class sharing. Overall effect is to heighten one's awareness of inner strength. Instructor ensures individual attention.  
NOTE: Please wear loose, non restric-tive clothing and bring non-skid mat or rug.  
Thurs., 7:30-9:00 p.m. 10 weeks  
Instructor: Helen Sia  
Tuition & Fees: \$40.00

Ballet I 07-08  
For the interested person who has little or no dance experience, this course is designed to enhance the stu-dents understanding of movement and appreciation of the dance as an art form. The course includes an explana-tion of what constitutes a ballet and how the dance is created. Students will learn beginning movements, vocabulary, and specific practice exercises, empha-sizing technique and body placement.  
NOTE: All participants must sign a statement of physical condition the first night of class.  
Mon., 7:00-8:00 p.m. 10 weeks  
Instructor: Madelon Curtis  
Tuition & Fees: \$22.00

Broadway Jazz I 07-09  
Jazz dance is an indigenous Ameri-can art form and today is vibrant and dazzling. Jazz dance is seen in Broadway shows, movie musicals and Las Vegas club floor shows.  
Course emphasis will be on dance exercises for stretch and strength.

Students will learn basic steps and floor combinations in Luigi lyrical jazz and Bob Fosse Broadway show jazz. Course culminates with a finished jazz dance routine.  
NOTE: All participants must sign a statement of physical condition the first night of class.  
Mon., 8:00-9:00 p.m. 10 weeks  
Instructor: Madelon Curtis  
Tuition & Fees: \$22.00

Beginner Tap Dancing 07-10  
This class is for those who have little or no tap-dancing experience. No spe-cial talents are necessary, just a desire to learn and have fun. Course introduces the basic steps of tap-dancing and leads to simple combinations. Standard tap shoes with heel and toe taps are required.  
Mon., 9:00-10:00 p.m. 10 weeks  
Instructor: Madelon Curtis  
Tuition & Fees: \$22.00

Beginning Golf 07-11  
An introduction to the game for those who want to learn the right way to play. Terminology, basic rules of golf, and the proper etiquette on the course will be presented. Equipment, the fundamentals of the swing (grip, stance, posture and finish) will be examined. Specific exercises to improve your game will be discussed.  
NOTE: All participants must sign a statement of physical condition the first night of class.  
Fri., 6:30-8:15 p.m. 6 weeks  
Instructor: Richard Mastrovich  
Tuition & Fees: \$35.00

Intermediate Golf 07-12  
A refresher course for those who already know how to play the game and now want to play correctly. The course will review the basics of the game, swing theory, putting and ap-proach. Concentration is placed on analysis and correction of swing. In-struction will be given on how to play trouble shots.

NOTE: All participants must sign a statement of physical condition the first night of class.  
Please wear sneakers and bring a nine-iron the first night.  
Fri., 8:15-9:45 p.m. 6 weeks  
Instructor: Richard Mastrovich  
Tuition & Fees: \$35.00

REFRESHER & REMEDIAL COURSES

Basic English 08-01  
This course, while concentrating on

"everyday" usefulness, will explore and teach basic principles of clear writing. Emphasis will be on effective methods of communication of ideas, including definition, description, narration and argumentation as well as grammar.  
Tues., 6:30-9:00 p.m. 10 weeks  
Instructor: Carole McDonough  
Tuition & Fees: \$60.00

Basic Math 08-03  
Fundamental properties of basic math, including natural numbers, inte-gers, rationals and real numbers. Deci-mal and percent notation.  
Thurs., 7:00-9:30 p.m. 10 weeks  
Tuition & Fees: \$60.00

This Coupon is Reserved for NON CREDIT COURSES. Do Not Use for Graduate or Undergraduate Registration.

REGISTRATION BY MAIL — NOW COMMUNITY SERVICE PROGRAM

To assure enrollment in the course of your choice, you may register by mail. Com-plete the form below and mail with your check covering tuition and fee by February 1st. By return mail you will receive your official registration card indicating building, classroom and night of class.

Name: \_\_\_\_\_  
Street & No. \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone: Home \_\_\_\_\_ Business \_\_\_\_\_  
Course No. \_\_\_\_\_ Title \_\_\_\_\_ Tuition & Fees \_\_\_\_\_

Detach and Mail to: \_\_\_\_\_ Total \$ \_\_\_\_\_  
University of Lowell  
Continuing Education  
1 University Avenue  
Lowell, MA 01854

Graduate Registration

JANUARY 12, 13  
6:00 — 8:00 P.M.  
CUMNOCK HALL AUDITORIUM, NORTH CAMPUS  
Classes begin: January 18, 1982

COURSE OFFERINGS

All courses run 6:00 - 9:00 p.m., unless otherwise noted.

EDUCATION (All courses meet 7:00 - 9:30 p.m.)

	CR	DAY
01.521 Tests and Measurements	3	Wed.
01.635 Individual Assessment of Intelligence: Wechsler & Binet	3	Mon.
03.552 Learning Centers in Elementary Classrooms	3	Tues.
04.652 Seminar in Career Education - Programs and Techniques	3	TBA
04.654 Computer Literary for Teachers	3	Thurs.
03.548 Causes and Treatment of Behavior Problems in the Classroom	3	Wed.
* 82.551 Human Sexuality - Current Perspectives	3	Thurs.(4-7 PM)

BUSINESS ADMINISTRATION -- MBA Program

Courses in Business Administration are limited to students who have been officially admitted and matriculated in the MBA Program or to holders of an MBA degree.

60.601 Financial Accounting	3	Mon. (5-7:30 PM)
60.612 Managerial Accounting	3	Thurs.
60.752 Information Systems	3	Thurs. (5-7:30 PM)
64.601 Economics of the Firm	3	Wed.
64.611 Quantitative Analysis	3	Tues.
66.602 Computers in Business	3	Thurs.
66.622 Marketing	3	Wed. (5-7:30 PM)
66.632 Business Financial Analysis	3	Tues.
66.651 Human Resources Management	3	Mon.
66.660 Business & Society	3	Mon.
66.672 Operations Management	3	Thurs.
66.673 Operations Research	3	Mon.
66.723 Marketing Analysis & Planning	3	Tues.
66.724 Marketing Research	3	Wed.
66.732 Financial Markets & Institutions	3	Thurs.
66.736 Portfolio & Security & Analysis	3	Tues.
66.737 Current Topics in Finance	3	TBA
66.772 Operations Management & Planning	3	Thurs.
66.781 Business Policy	3	Wed. (4-6:30 PM)
66.783 International Business	3	Mon.

ELECTRICAL ENGINEERING, COMPUTER ENGINEERING SYSTEMS ENGINEERING

16.411G Logic Design of Digital Systems I	3	Mon.
16.417G Absolute & Symbolic Programming	3	Wed.

	CR	DAY
16.517 *Optimal Control Theory	3	Thurs.
16.519 Digital Control Systems	3	Wed.
16.520 Numerical Computing	3	Mon. or Thurs.
16.522 Data Structures	3	Mon. or Wed.
16.531 Active Networks	3	Thurs.
16.547 Statistical Communication Theory	3	Tues.
16.572 Intro. to Microprocessors	3	Tues.
16.575 Digital Subsystem Design	3	Tues.
16.601 Seminar	3	Wed. or Thurs.
16.652 Special Topic: Stochastic Estimation Theory & Applications	3	Mon.

PLASTICS

26.502 New Plastics Processing Techniques	3	Thurs.
26.506 Polymer Structure, Properties & Applications	3	Wed.
26.532 Adhesives & Adhesion	3	Mon.
26.535 Rubber II	3	Tues.

BIOLOGICAL SCIENCES

81.522 Plant Physiology	3	Mon.
81.584 Biochemical Genetics	3	Tues.
81.502 Selected Topics in Biology	3	Wed.
81.602 Graduate Seminar in Biology	2	Thurs. (6-8 PM)
*82.551 Human Sexuality: Current Perspectives	3	Thurs. (4-7 PM)

MATHEMATICS/COMPUTER SCIENCE

92.464 Systems Design & Development	3	Tues. (7-10 PM)
92.468 Minicomputer Principles & Applications	3	Tues. (7-10 PM)
92.512 Complex Analysis II	3	Tues.
92.564 Numerical Algebra & Approximation Theory	3	Mon.
92.566 Theory of Computation	3	Mon.
92.567 Systems Programming	3	Thurs.
92.569 Compiler Construction	3	Thurs.
92.570 Data Communications	3	Wed.
92.571 Optimization & Mathematical Prog. I	3	Wed.
92.574 Data Base Management	3	Thurs.
92.575 Analysis of Algorithms	3	Wed.
92.578 Programming Language II	3	Thurs.
92.588 Mathematical Statistics II	3	Wed.
92.871 Programming Language I	3	Thurs.

\* In addition to biologists, this course is designed to serve the needs of teachers, counselors, health professionals, and others concerned with the applied aspects of the subject.